Java - OOJ Lab
Lab - 4

Develop a Java program to create an abstract
class named Shape that contains two integers
and an empty method named printArea().
Provide three classes named Rectangle, Triangle
and Circle such that each one of the classes
extends the class Shape. Each one of the
classes contain only the method printArea()
that prints the area of the given shape.

```java
import java.util.Scanner;
abstract class InputScanner
{
        abstract void get_dim();
}
abstract class Shape extends InputScanner
{
        int a, b;
        Shape (int a, int b)
        {
                this.a = a;
                this.b = b;
        }
        Shape (int a)
        {
                this.a = a;
                this.b = 0;
        };
        abstract void printArea();
}
class Rectangle extends Shape
{
        Rectangle (int a, int b)
```

```java
        {
                super (a, b);
        }
        void  get_dim()
        {
                System.out.println(" Enter the
                dimensions of the rectangle
                (length and breadth) ");
                Scanner s = new Scanner
                                (System.in);
                a = s.nextInt();
                b = s.nextInt();
        }
        void printArea()
        {
                System.out.println(" Area of
                Rectangle = "+(a*b));
        }
}
class Triangle extends Shape
{
        Triangle (int a, int b)
        {
                super(a, b);
        }
        void get_dim()
        {
                System.out.println(" Enter the
                dimensions of the triangle (base and
                height)");
                Scanner s = new Scanner(System.in);
                a = s.nextInt();
                b = s.nextInt();
        }
        void printArea()
```

```java
        {
                System.out.println (" Area of
                triangle = " + (0.5*a*b));
        }
}
class Circle extends Shape
{
        Circle (int a)
        {
                super(a);
        }
        void get_dim ()
        {
                System.out.println (" Enter the
                dimensions of the circle (radius)").
                Scanner s= new Scanner (System.in).
                a = s.nextInt ();
        }
        void print Area () {
        {
                System.out.println (" Area of circle = " +
                (3.14 *a*a));
        }
}
class ShapeMain
{
        public static void main ( String args[])
        {
                Rectangle r = new Rectangle (0, 0).
                Triangle t = new Triangle (0, 0);
                Circle c = new Circle (0);
                r.get_dim ();
                t.get dim();
                c.get dim();
                r.print Area ();
```

```
t · print Area ();
c · print Area ();
}
```

3.

O/p:

Enter dim of Rectangle (length and breadth):
2 3

Enter dim of Triangle (base and height):
2 4

Enter dim of Circle (radius):
3

Area of rectangle = 6
Area of triangle = 4.0
Area of circle = 28·2599999

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